



RETAIL MALL

DUAL 9, 12-MONTH PERFORMANCE GUARANTEED AIR FILTER RESULTS IN 3600 LESS FILTERS SHIPPED TO LANDFILL ANNUALLY AND 33% LESS HVAC ENERGY USAGE

COMPANY PROFILE

Ranking in the top ten for most productive shopping centers, this mall in Western Canada contains over 200 retailers sharing nearly one million square feet of covered space. Mall ownership implemented a sustainability program to demonstrate their environmental commitment and to support controlling operating costs while gaining loyalty from both shop owners and their mall patrons.

THE SITUATION

The current air filtration program involved changing an economy-grade, cut-to-size flat panel polyester media filter four times per year in over 300 air handling units. The annual labor hours required to maintain the change-out schedule, as well as the additional time required to clean dirty heating and cooling coils, was placing significant drain on the maintenance staff's time and delayed work on several projects.

The mall is located where the snowy season typically begins early September and lasts until May. Three of the four annual filter changes usually occur during times when snow and ice are commonly present; increasing the time to accomplish needed tasks and adding an unnecessary risk to the process. Knowing there had to be lower labor, lower risk alternatives, the maintenance staff consulted with their local Camfil representatives for solutions.

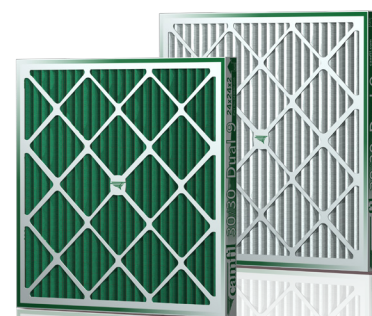
THE ACTION

The Camfil representative introduced the staff to the 30/30® Dual 9; a MERV 9/9A high capacity pleated air filter with a 12-month service life guarantee. To support Camfil's unique 12-month filter claim, a pressure drop testing program was instituted to evaluate and prove the Dual 9's ability to maintain proper airflow into the building for the full 12 months. The mall staff installed Dual 9s in several air handling units in order to compare the performance against their current filters installed in nearby units.

Over the next year, dirty filters were regularly tested in Camfil's CamTester – a portable test chamber capable of accurately recording the pressure drop of dirty or clean air filters. While the mall's current filters were replaced on a regular quarterly schedule, the Dual 9 filters were returned to service after testing for the entire year.

THE RESULT

The test proved the 30/30 Dual 9 filters could remain in service for 12 months while delivering a greater volume of cleaner air at a lower average pressure drop.



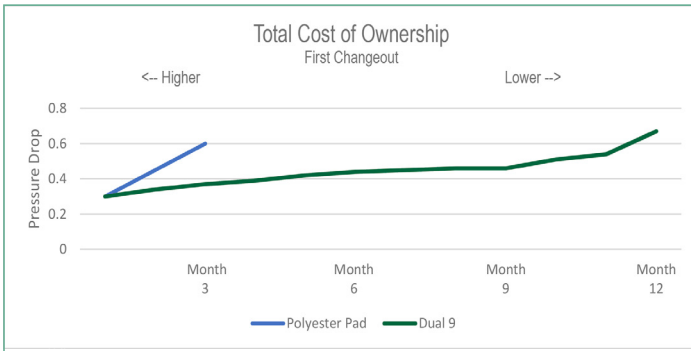
"The Dual 9 resulted in fewer change-outs and seven weeks of reallocated labor, plus significant annual energy and landfill savings. I wish we had converted sooner."

– Facility Manager

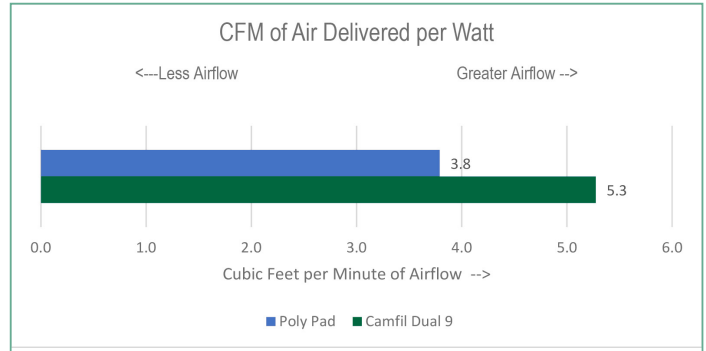
THE PROOF

Dual 9 Performance

The CamTester displayed the remarkable dirt holding capacity and low resistance of the Camfil 30/30® Dual 9. Three months into the test, the pressure drop on the current polyester media stood at 0.60" w.g. while the Camfil filter was only 0.37" w.g. The polyester pad was replaced at that point, but the Dual 9 was returned in-service. It took 12 months before the Dual 9 reached 0.60" w.g. The units using the polyester pad had been replaced three additional times before the Dual 9 was replaced once.



The combination of a proprietary media formed into wire supported U-shaped pleats and sealed within a strong, water resistant frame, allows the entire surface area of the filter to be used. The resulting high dust holding capacity and low resistance makes the extended service life possible.



The CamTester's watt meter will accurately compare the energy required to deliver air into the building for each filter. Energy is often 70% of the total operational cost of an HVAC system. More air delivered per unit of energy results in lower energy usage.

Indirect Cost Savings

- Labor savings reducing from four changeouts per year to one was calculated to be the equivalent of seven full weeks of labor. Those seven 'free' weeks are now used on other projects which deliver their own associated benefits and cost savings.
- In keeping with the mall's sustainability initiatives, it was determined if all 300+ air handling units had the Dual 9 installed, there would have been 3600 fewer dirty filters shipped to the local landfill that year.
- Analyzing the rated particle capture efficiency of each filter indicates the Dual 9 captured and removed up to six times more harmful particles in the 0.4 micron size range.
- On average, 70% of the total cost of an HVAC system is the energy consumed by the fan to supply the required volume of conditioned air to a building. The CamTester kW meter readings on the two test filters indicated that the Camfil 30/30 Dual 9 delivered 5.3 CFM of air per watt while the Poly Pad delivered only 3.8 CFM; a 33% difference between the two filters in air delivered per watt.



During a CamTester filter test, the airflow can be adjusted to duplicate the test unit's CFM or to a flow rate commonly used for comparative purposes. The pressure drop in inches of water gauge is displayed as well as the watts required to power the fan. The CamTester information reveals the filter with the lowest total cost of ownership.